

## LYCOPODIUM SABINAEFOLIUM AND L. SITCHENSE.

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LYCOPODIUM SABINAEFOLIUM Willd., var. **sitchense** (Rupr.), n. comb. *L. sitchense* Rupr. Beitr. Z. Pflanzenk. Russ. Reich. iii. 30 (1845).

When *L. sitchense* was first taken up<sup>1</sup> by recent American students as a species distinct from *L. sabinaefolium* comparatively little material was at hand, only 24 collections of the two being cited. Subsequently extensive field work has made these plants better known and the writer now has before him 121 sheets of the two; but with the accumulation of such a series of specimens, one third of the number collected by himself, he has gradually found the lines of demarcation between the two growing more and more obscure. In their extremes they are fairly marked, typical *L. sabinaefolium* having somewhat dorsiventral branchlets with the leaves 4-ranked and the free tips of the leaves usually shorter than the decurrent base; typical *L. sitchense* having essentially terete branchlets with the leaves 5-ranked and their free tips usually longer than the decurrent base. Too often, however, it is almost if not quite impossible to say into which series a given collection should be placed, the condition thus being comparable with that presented by *L. obscurum* L. and its var. *dendroidum* (Michx.) D. C. Eaton.

When they had only a few specimens Lloyd & Underwood were able to define *L. sitchense* as having "peduncles short (less than 1 cm.)" and *L. sabinaefolium* with "peduncles (1-5 cm. long . . .)." But 14 sheets,<sup>2</sup> which in foliage are typical *L. sitchense*, show slender peduncles 1.2-3 cm. long; while 7 sheets<sup>3</sup> with the dorsiventral branchlets of true *L. sabinaefolium* have some or all of the strobiles essentially sessile. It is a striking fact, but exactly what one would expect, that the plants of the more exposed habitats have the shortest ped-

<sup>1</sup> Lloyd & Underwood, Bull. Torr. Bot. Cl. xxvii. 162 (1900).

<sup>2</sup> Such, for instance, as: dry spruce woods, St. Jean l'Évangéliste, Nouvelle, Que., Collins & Fernald; dry sunny barren near Jersey Cove, Cape Breton, Nichols, no. 1416; Stevens Mt., Fort Kent, Maine, Williams; bank of Fish River, Fort Kent, Maine, Churchill; pasture, Lombard Hill, Colebrook, New Hampshire, Pease, no. 16,947; base of Pine Mt., Gorham, New Hampshire, Pease, no. 17,925; top of Willoughby Mt., Vermont, Cheever.

<sup>3</sup> Such, for instance, as: granite ledges, summit of Hodge's Hill, Newfoundland, Fernald, Wiegand & Bartram, no. 4389; terrains secs, Petit-Saguenay, Quebec, Victorin, no. 9331; subalpine wooded meadows, Table-top Mt., Quebec, Fernald & Collins, no. 153; dry clearings, Alberton, Prince Edward Island, Fernald & St. John, no. 6705.

uncles, while those of deep shade have them longer. Thus the bulk of typical *L. sitchense*, a plant characteristic of open barrens and alpine summits, has sessile or short-peduncled strobiles, while the specimens from woods show definite elongation of the peduncle. Conversely, *L. sabinaefolium* is most commonly a plant of woodland and thicket and in deep shade its peduncles may reach the length of 5–8 cm.<sup>1</sup>

Search for new characters to separate the two plants as species has thus far proved fruitless and the writer is forced to the conclusion that *L. sabinaefolium* and its var. *sitchense* are quite parallel with *L. obscurum* and its var. *dendroideum*; the tendency to dorsiventral branchlets and looser habit being found in the plant which is more characteristic of woods and thickets, the tendency to more terete branchlets and compact habit in the plant which more often occurs in the open. In this connection it is significant that in his study of the sheets in the Gray Herbarium, Professor Lloyd originally gave them a varietal name which seems not to have been published. It is also significant that Lloyd & Underwood state, in their discussion of *L. sitchense*: "This form has been confused with *L. sabinaefolium* Willd. and Herr Ernst Pritzel, who has kindly examined Willdenow's type sheet for us at Berlin, . . . assures us that both this plant and what we here regard as true *L. sabinaefolium* are a part of Willdenow's original material from which he doubtless drew the description of *L. sabinaefolium*. The description of the latter with its expression 'foliis lanceolatis acutis quadrifariis' indicates clearly the form Willdenow had in mind in naming the plant."<sup>2</sup> Willdenow's phrase certainly indicates which of the two plants he called *L. sabinaefolium* should be taken as the type; but the circumstance that he had *L. sitchense* mixed with it shows that he did not regard them as distinct species.

#### GRAY HERBARIUM.

<sup>1</sup> Such plants as: dry spruce woods, Nouvelle, Quebec, *Collins & Fernald* (5 cm.); dry woods, Tarbet Vale, Cape Breton, *Nichols*, no. 1383 (3–6 cm.); woods, Fall Brook, near St. Francis River, Maine, *Churchill* (5.5–6.5 cm.); woods, Sharon, New Hampshire, *Blake* no. 516, paratype of *L. sabinaefolium*, var. *sharonense* *Blake* (6.5–8 cm.).

<sup>2</sup> Lloyd & Underwood, l. c. 162, 163 (1900).